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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,160	04/15/2004	Hua-Jun Zeng	MS1-1892US	8619

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LEE & HAYES PLLC
421 W RIVERSIDE AVENUE SUITE 500
SPOKANE, WA 99201

EXAMINER	
SANDERS, AARON J	

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2168	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/826,160	ZENG ET AL.	
	Examiner	Art Unit	
	AARON SANDERS	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-15,17-31,33-45,47-50 and 52-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-15,17-31,33-45,47-50 and 52-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 April 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :12/18/2007, 3/18/2008 and 04/18/2008.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 18 March 2008 has been entered.

Response to Amendment

Applicant's amendment filed 18 March 2008 has been entered. Claims 1, 3-15, 17-31, 33-45, 47-50 and 52-54 are pending. Claims 2, 16, 32, 46 and 51 are canceled. Claims 1, 9, 13, 15, 18, 23-31, 36, 39, 43, 45, 50 and 54 are currently amended.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the method of claims 9 and 39 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure

must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 1, 4, 6, 9, 15, 17-24, 31, 34, 39, 45 and 50 are objected to.

As per claim 1, it appears that the phrase "a problem diagnosis data comprising" should be "the problem diagnosis data comprising."

As per claims 1, 9, 15, 31, 39 and 45, it appears that the phrase "communication processes" should be "communication process."

As per claims 1, 9, 15, 31, 39 and 45, it is not clear how the "unstructured service requests/problem diagnosis data" comprise "information that is the result of… communication processes" when , according to [0026] of the specification, the "unstructured service requests" are the result of that "communication process."

As per claims 4, 9, 18 and 34, there should be an "and" after the second to last limitation.

As per claim 6, it appears that the word "teens" should be "terms."

As per claims 9 and 39, it is not clear what is presented to the user. The claim states that the user is presented with "product problem diagnosis data" and "structured answer objects" (claim 12). The presentation of both "product problem diagnosis data" and "structured answer objects" does not appear to be supported by the specification.

As per claims 9 and 39, it is unclear how the "historic product problem diagnosis data" can comprise "information that is a result of… communication processes" since, according to [0026] of the specification, it is the "unstructured service requests" that are the result of that "communication process" and the "diagnosis data" is part of the "structured answer objects."

As per claims 17-22, the phrase "computer-readable medium" should be "computer-readable storage medium."

As per claim 23, it is unclear how the "information" is "derived from… communication processes" since, according to [0026] of the specification, it is the "unstructured service requests" that are the result of that "communication process" and the "information" is a "structured answer objects" (claim 26).

As per claim 24, the "historic problem diagnosis data" lacks antecedent basis in the claims.

As per claim 50, the phrase "the means enabling a user to" is indefinite because it does not require that the following functionality be performed. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim Rejections - 35 USC § 112, First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 15, 31, 45 and 50 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As per claims 1, 15, 31 and 45, the limitation "unstructured service requests comprising information that is a result of an end-user and product support engineer product communication processes" does not appear to be disclosed in the specification. The specification states that "Each entry logged in PSS service request log 108 is the result of end-user and product support engineer/staff product problem diagnosis, troubleshooting, and resolution probing communication processes." The log entries appear to be the "unstructured service requests," but the claims indicate that they comprise information that is the result of the communication process, not that they are the result of that process.

As per claim 50, "historic problem cause and resolution data" as opposed to "historic problem diagnosis data" does not appear in the specification. Rather, according to e.g. [0022], diagnosis data does not include resolution data, so "diagnosis data" cannot be equivalent to "cause and resolution data."

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 45 and 47-49 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claims 45 and 47-49, the instant claims are directed to software *per se*. Independent claim 45 recites a computer program *per se* and functional descriptive material consisting of data structures and computer programs, which impart functionality when employed as a computer component. As such, the instant claims are not limited to statutory subject matter and are therefore non-statutory. See Diehr, 450 U.S. at 185-86, 209 USPQ at 8.

Specifically, none of the claimed means are defined in the specification as being exclusively hardware, thus they may be software, making the claims software *per se*.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-6, 9-12, 15, 17-20, 23-26, 29-31, 33-36, 39-42, 45, 47-50 and 52-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Simoudis, U.S. 5,224,206 (Simoudis).

1. Simoudis teaches "A computer-implemented method comprising: converting, by a computing device, unstructured service requests comprising information that is a result of an

end-user and product support engineer product communication processes, which is not based on information solely generated by a professional writer or a vendor tasked with documenting a product, to one or more structured answer objects, each unstructured service request including information to narrow product problem symptom(s) to a root cause, each structured answer object comprising hierarchically structured historic problem diagnosis data," see Fig. 1, col. 1, lines 23-35, "Case based reasoning is an artificial intelligence technique implemented with a computer that accepts the description of a problem and uses a database of past cases in order to find a solution to the problem at hand. The term 'case' refers to a problem-solving experience" and col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem. When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14… Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "unstructured service request" is the referenced "new problem," the claimed "structured answer objects" are the referenced "retrieve[d] cases," the claimed "communication process" is the referenced "problem-solving experience," the claimed "information to narrow product problem symptom(s)" is the referenced "most important features" and the claimed "hierarchically structured historic problem diagnosis data" is the referenced "symptoms of the problem, the cause of a problem, and a solution to the problem" which is historic since it is a previously solved case and is hierarchical because a symptom must have a cause which must have a solution.

Simoudis teaches "and in view of the product problem symptom(s): identifying a set of the one or more structured answer data objects, each structured answer data object in the set comprising term(s) and/or phrase(s) related to the product problem symptom(s)," see Fig. 1 and col. 3, lines 50-64, "Once the case retriever 14 has retrieved cases from the case library 12… the case retriever 14 then performs a justification for each of the cases which have been retrieved… The first action is the acceptance of a retrieved case because it is justifiably relevant to the problem being solved," where the claimed "set" is the referenced "case [that] is justifiably relevant."

Simoudis teaches "and providing historic and hierarchically structured problem diagnosis data from the set to an end-user for product problem diagnosis," see Fig. 1 and col. 7, lines 9-23, "The retrieved cases whose causal explanation can be successfully used to solve a problem are returned to the user or the case reasoner."

Simoudis teaches "a problem diagnosis data comprising: a product problem description," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "description" is the referenced "symptoms of the problem."

Simoudis teaches "a product problem cause that caused a described product problem," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "cause" is the referenced "cause of the problem."

Simoudis teaches "and a product problem resolution that resolves the described product problem by fixing a corresponding product problem cause, wherein a product problem

description data field is a parent node of a product problem cause data field, and the product problem cause data field is a parent node of the product problem resolution data field," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "resolution" is the referenced "solution to the problem," and where the results are hierarchical because a symptom must have a cause which must have a solution.

3. Simoudis teaches "The method of claim 1, and wherein the problem diagnosis data comprise a link to a product support article," see col. 9, lines 61-67, "A causal explanation is an annotation, or summary, made by the technician or user who inserted a case in the case library 12."

4. Simoudis teaches "The method of claim 1, and wherein converting the unstructured service requests, identifying the set, and providing the historic and hierarchically structured problem diagnosis data are performed by a server computing device, and wherein the method further comprises," see Fig. 1 and col. 3, lines 15-27, "A case-based reasoning system is shown in FIG. 1."

Simoudis teaches "receiving, from a client computing device, the product problem description," see Fig. 1 and col. 3, lines 28-40, "When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14."

Simoudis teaches "and wherein providing the historic and hierarchically structured problem diagnosis data further comprises: searching an index for terms and/or phrases that match term(s) in the product problem description to identify the one or more structured answer objects

in the set," see Fig. 1 and col. 3, lines 28-40, "When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14."

Simoudis teaches "communicating the set to the client computing device for display by a troubleshooting wizard to the end-user," see Fig. 1 and col. 7, lines 9-23, "The retrieved cases whose causal explanation can be successfully used to solve a problem are returned to the user or the case reasoner."

5. Simoudis teaches "The method of claim 1, wherein the method further comprises dynamically generating a knowledge base article from information provided by the set," see col. 4, lines 4-14, "A second type of learning occurs after the new problem has been solved (or not solved), with the information gained during the problem solving session being stored as a new case in the case library 12."

6. Simoudis teaches "The method of claim 1, wherein after converting the unstructured service requests and before identifying the set and providing the historic and hierarchically structured problem diagnosis data, the method further comprises: generating an index by: extracting features from the structured answer objects; analyzing the features to identify the terms and the phrases; assigning relevance weight to the terms and the phrases; normalizing terminology within the teens and the phrases; and wherein operations for identifying the set are based on information in the index," see col. 2, lines 8-24, "In order to guarantee that only one case is retrieved from the case library, these existing systems use various methods for organizing the case library, and rely on heuristic techniques in order to determine how to best search the case library."

9. Simoudis teaches "A method at least partially implemented by a computing device comprising: communicating, by a troubleshooting wizard, a search request comprising a product problem description to a server computing device," see Fig. 1 and col. 3, lines 28-40, "When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14."

Simoudis teaches "responsive to receiving the search request, systematically presenting to a user of the troubleshooting wizard historical product problem diagnosis data organized by the server computing device into a hierarchical tree from structured answer data objects in view of the product problem description," see Fig. 1 and col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem. When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14… Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "search request" is the referenced "new problem," the claimed "structured answer data objects" are the referenced "retrieve[d] cases" and the claimed "hierarchically tree" is the referenced "symptoms of the problem, the cause of a problem, and a solution to the problem" which is hierarchical because a symptom must have a cause which must have a solution.

Simoudis teaches "responsive to receiving a response to the search request, presenting, by the troubleshooting wizard, information from the response to the user wherein the information comprises historic problem diagnosis data, the historic problem diagnosis data comprising information that is a result of an end-user and product support engineer product communication

processes, which is not based on information solely generated by a professional writer or a vendor tasked with documenting a product, being associated with term(s) and/or phrase(s) related to the product problem description," see Fig. 1, col. 1, lines 23-35, "Case based reasoning is an artificial intelligence technique implemented with a computer that accepts the description of a problem and uses a database of past cases in order to find a solution to the problem at hand. The term 'case' refers to a problem-solving experience" and col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem. When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14… Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "communication process" is the referenced "problem-solving experience" and the claimed "historic problem diagnosis data" is the referenced "symptoms of the problem, the cause of a problem, and a solution to the problem" which is historic since it is a previously solved case.

10. Simoudis teaches "The method of claim 9, wherein the historic problem diagnosis data comprise any one or more of hierarchically structured product problem description(s), symptom(s), cause(s), and resolution(s)," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem."

11. Simoudis teaches "The method of claim 9, wherein the information comprises a link to a product support article," see col. 9, lines 61-67, "A causal explanation is an annotation, or summary, made by the technician or user who inserted a case in the case library 12."

12. Simoudis teaches "The method of claim 9, wherein the information comprises a set of structured answer objects," see col. 3, lines 28-40, "Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "structured answer objects" are the referenced "retrieve[d] cases."

15. Simoudis teaches "A computer-readable storage medium comprising computer-executable instructions for: converting, by a computing device, unstructured service requests to one or more structured answer objects, each unstructured service request comprising information that is a result of an end-user and product support engineer product communication processes and including information to narrow product problem symptom(s) to a root cause, each structured answer object comprising hierarchically structured historic problem diagnosis data," see Fig. 1, col. 1, lines 23-35, "Case based reasoning is an artificial intelligence technique implemented with a computer that accepts the description of a problem and uses a database of past cases in order to find a solution to the problem at hand. The term 'case' refers to a problem-solving experience" and col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem. When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14… Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "unstructured service request" is the referenced "new problem," the claimed "structured answer objects" are the referenced "retrieve[d] cases," the claimed "communication process" is the referenced "problem-solving experience," the claimed

"information to narrow product problem symptom(s)" is the referenced "most important features" and the claimed "hierarchically structured historic problem diagnosis data" is the referenced "symptoms of the problem, the cause of a problem, and a solution to the problem" which is historic since it is a previously solved case and is hierarchical because a symptom must have a cause which must have a solution.

Simoudis teaches "and in view of the product problem symptom(s): identifying a set of the one or more structured answer data objects, each structured answer data object in the set comprising terms (and/or phrases) related to the product problem symptom(s) ," see Fig. 1 and col. 3, lines 50-64, "Once the case retriever 14 has retrieved cases from the case library 12… the case retriever 14 then performs a justification for each of the cases which have been retrieved… The first action is the acceptance of a retrieved case because it is justifiably relevant to the problem being solved," where the claimed "set" is the referenced "case [that] is justifiably relevant."

Simoudis teaches "and providing historic and hierarchically structured problem diagnosis data from the set to an end-user for product problem diagnosis," see Fig. 1 and col. 7, lines 9-23, "The retrieved cases whose causal explanation can be successfully used to solve a problem are returned to the user or the case reasoner."

Simoudis teaches "the problem diagnosis data comprising: a product problem description," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "description" is the referenced "symptoms of the problem."

Simoudis teaches "a product problem cause that caused the described product problem," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "cause" is the referenced "cause of the problem."

Simoudis teaches "and a product problem resolution that resolves the described product problem by fixing the corresponding product problem cause, wherein a product problem description data field is a parent node of a product problem cause data field, and the product problem cause data field is a parent node of the product problem resolution data field," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "resolution" is the referenced "solution to the problem," and where the results are hierarchical because a symptom must have a cause which must have a solution.

17. Simoudis teaches "The computer-readable medium of claim 15, and wherein the problem diagnosis data comprise a link to a product support article," see col. 9, lines 61-67, "A causal explanation is an annotation, or summary, made by the technician or user who inserted a case in the case library 12."

18. Simoudis teaches "The computer-readable medium of claim 15, and wherein converting the unstructured service requests, identifying the set, and providing the historic and hierarchically structured problem diagnosis data are performed by a server computing device, and wherein the computer-executable instruction further comprise instructions for," see Fig. 1 and col. 3, lines 15-27, "A case-based reasoning system is shown in FIG. 1."

Simoudis teaches "receiving, from a client computing device, the product problem description," see Fig. 1 and col. 3, lines 28-40, "When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14."

Simoudis teaches "and wherein providing the historic and hierarchical, structured problem diagnosis data further comprises: searching an index for terms and/or phrases that match term(s) in the product problem description to identify the one or more structured answer objects in the set," see Fig. 1 and col. 3, lines 28-40, "When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14."

Simoudis teaches "communicating the set to the client computing device for display by a troubleshooting wizard to the end-user," see Fig. 1 and col. 7, lines 9-23, "The retrieved cases whose causal explanation can be successfully used to solve a problem are returned to the user or the case reasoner."

19. Simoudis teaches "The computer-readable medium of claim 15, wherein the computer-executable instruction further comprise instructions for dynamically generating a knowledge base article from information provided by the set," see col. 4, lines 4-14, "A second type of learning occurs after the new problem has been solved (or not solved), with the information gained during the problem solving session being stored as a new case in the case library 12."

20. Simoudis teaches "The computer-readable medium of claim 15, wherein after converting the unstructured service requests and before identifying the set and providing the historic and hierarchically structured problem diagnosis data, the computer- executable instruction further comprise instructions for: generating an index by: extracting features from the

structured answer objects; analyzing the features to identify the teens and the phrases; assigning relevance weight to the terms and the phrases; normalizing terminology within the terms and the phrases; and wherein identifying the set is based on information in the index," see col. 2, lines 8-24, "In order to guarantee that only one case is retrieved from the case library, these existing systems use various methods for organizing the case library, and rely on heuristic techniques in order to determine how to best search the case library."

23. Simoudis teaches "A computer-readable storage medium comprising computer-executable instructions executable on a computing device for: communicating, by a troubleshooting wizard, a search request comprising a product problem description to a server computing device," see Fig. 1 and col. 3, lines 28-40, "When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14."

Simoudis teaches "and responsive to receiving a response to the search request, presenting, by the troubleshooting wizard, information from the response to the user, wherein the information is derived from end-user and product support engineer product communication processes, and which is not based on information solely generated by a professional writer or vendor tasked with documenting a product problem," see Fig. 1, col. 1, lines 23-35, "Case based reasoning is an artificial intelligence technique implemented with a computer that accepts the description of a problem and uses a database of past cases in order to find a solution to the problem at hand. The term 'case' refers to a problem-solving experience" and col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem. When a new problem is presented to the system 10, the

information (or symptoms) relating to the new problem is input into a case retriever 14… Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "communication process" is the referenced "problem-solving experience."

Simoudis teaches "and wherein the information comprises: a product problem description," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "description" is the referenced "symptoms of the problem."

Simoudis teaches "a product problem cause that caused a described product problem," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "cause" is the referenced "cause of the problem."

Simoudis teaches "and a product problem resolution that resolves the described product problem by fixing a corresponding product problem cause, wherein a product problem description data field is a parent node of a product problem cause data field, and the product problem cause data field is a parent node of the product problem resolution data field," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "resolution" is the referenced "solution to the problem," and where the results are hierarchical because a symptom must have a cause which must have a solution.

24. Simoudis teaches "The computer-readable storage medium of claim 23, wherein the historic problem diagnosis data comprise any one or more of hierarchically structured product

problem description, symptom, cause, and resolution information," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem."

25. Simoudis teaches "The computer-readable storage medium of claim 23, wherein the information comprises a link to a product support article," see col. 9, lines 61-67, "A causal explanation is an annotation, or summary, made by the technician or user who inserted a case in the case library 12."

26. Simoudis teaches "The computer-readable storage medium of claim 23, wherein the information comprises a set of structured answer objects," see col. 3, lines 28-40, "Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "structured answer objects" are the referenced "retrieve[d] cases."

29. Simoudis teaches "A computer-readable storage medium comprising a structured answer object data structure for use in product problem analysis and diagnosis, the structured answer object data structure comprising," see Fig. 1 and col. 7, lines 9-23, "The retrieved cases whose causal explanation can be successfully used to solve a problem are returned to the user or the case reasoner."

Simoudis teaches "a product problem description data field," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "description" is the referenced "symptoms of the problem."

Simoudis teaches "a product problem cause data field," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "cause" is the referenced "cause of the problem."

Simoudis teaches "a product problem resolution data field," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "resolution" is the referenced "solution to the problem."

Simoudis teaches "and wherein the product problem description data field is a parent node of the product problem cause data field, and the product problem cause data field is a parent node of the product problem resolution data field," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the results are hierarchical because a symptom must have a cause which must have a solution.

30. Simoudis teaches "The computer-readable storage medium of claim 29, wherein the structured answer object data structure further comprises a product problem symptom data field, the product problem description field being a parent node of the product problem symptom data field," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "description" is the referenced "symptoms of the problem."

31. Simoudis teaches "A computing device comprising: a processor; and a memory coupled to the processor, the memory comprising computer-program instructions executable by

the processor for," see Fig. 1 and col. 3, lines 15-27, "A case-based reasoning system is shown in FIG. 1."

Simoudis teaches "converting, by a computing device, unstructured service requests to one or more structured answer objects, each unstructured service request comprises information that is a result of an end-user and product support engineer product communication processes, which is not based on information solely generated by a professional writer or vendor tasked with documenting a product, and includes including information to narrow product problem symptom(s) to a root cause, each structured answer object comprising hierarchically structured historic problem diagnosis data, " see Fig. 1, col. 1, lines 23-35, "Case based reasoning is an artificial intelligence technique implemented with a computer that accepts the description of a problem and uses a database of past cases in order to find a solution to the problem at hand. The term 'case' refers to a problem-solving experience" and col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem. When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14… Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "unstructured service request" is the referenced "new problem," the claimed "structured answer objects" are the referenced "retrieve[d] cases," the claimed "communication process" is the referenced "problem-solving experience," the claimed "information to narrow product problem symptom(s)" is the referenced "most important features" and the claimed "hierarchically structured historic problem diagnosis data" is the referenced "symptoms of the problem, the cause of a problem, and a solution to the

problem" which is historic since it is a previously solved case and is hierarchical because a symptom must have a cause which must have a solution.

Simoudis teaches "and in view of the product problem symptom(s): identifying a set of the one or more structured answer data objects, each structured answer data object in the set comprising term(s) and/or phrase(s) related to the product problem symptom(s) ," see Fig. 1 and col. 3, lines 50-64, "Once the case retriever 14 has retrieved cases from the case library 12… the case retriever 14 then performs a justification for each of the cases which have been retrieved… The first action is the acceptance of a retrieved case because it is justifiably relevant to the problem being solved," where the claimed "set" is the referenced "case [that] is justifiably relevant."

Simoudis teaches "and providing historic and hierarchically structured problem diagnosis data from the set to an end-user for product problem diagnosis," see Fig. 1 and col. 7, lines 9-23, "The retrieved cases whose causal explanation can be successfully used to solve a problem are returned to the user or the case reasoner."

Simoudis teaches "the problem diagnosis data comprising: a product problem description," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "description" is the referenced "symptoms of the problem."

Simoudis teaches "a product problem cause that caused the described product problem," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "cause" is the referenced "cause of the problem."

Simoudis teaches "and a product problem resolution that resolves the described product problem by fixing the corresponding product problem cause, wherein a product problem description data field is a parent node of a product problem cause data field, and the product problem cause data field is a parent node of the product problem resolution data field," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "resolution" is the referenced "solution to the problem," and where the results are hierarchical because a symptom must have a cause which must have a solution.

33. Simoudis teaches "The computing device of claim 31, and wherein the problem diagnosis data comprise a link to a product support article," see col. 9, lines 61-67, "A causal explanation is an annotation, or summary, made by the technician or user who inserted a case in the case library 12."

34. Simoudis teaches "The computing device of claim 31, and wherein converting the unstructured service requests, identifying the set, and providing the historic and hierarchically structured problem diagnosis data are performed by a server computing device, and wherein the computer-executable instruction further comprise instructions for," see Fig. 1 and col. 3, lines 15-27, "A case-based reasoning system is shown in FIG. 1."

Simoudis teaches "receiving, from a client computing device, the product problem description," see Fig. 1 and col. 3, lines 28-40, "When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14."

Simoudis teaches "and wherein providing the historic and hierarchically structured problem diagnosis data further comprises: searching an index for terms and/or phrases that match

term(s) in the product problem description to identify the one or more structured answer objects in the set," see Fig. 1 and col. 3, lines 28-40, "When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14."

Simoudis teaches "communicating the set to the client computing device for display by a troubleshooting wizard to the end-user," see Fig. 1 and col. 7, lines 9-23, "The retrieved cases whose causal explanation can be successfully used to solve a problem are returned to the user or the case reasoner."

35. Simoudis teaches "The computing device of claim 31, wherein the computer-executable instruction further comprise instructions for dynamically generating a knowledge base article from information provided by the set," see col. 4, lines 4-14, "A second type of learning occurs after the new problem has been solved (or not solved), with the information gained during the problem solving session being stored as a new case in the case library 12."

36. Simoudis teaches "The computing device of claim 31, wherein after converting the unstructured service requests and before identifying the set and providing the historic and hierarchically structured problem diagnosis data, the computer- executable instruction further comprise instructions for: generating an index by: extracting features from the structured answer objects; analyzing the features to identify the terms and the phrases; assigning relevance weight to the terms and the phrases; normalizing terminology within the terms and the phrases; and wherein identifying the set is based on information in the index," see col. 2, lines 8-24, "In order to guarantee that only one case is retrieved from the case library, these existing systems use various methods for organizing the case library, and rely on heuristic techniques in order to determine how to best search the case library."

39. Simoudis teaches "A computing device comprising: a processor; and a memory coupled to the processor, the memory comprising computer-program instructions executable by the processor for," see Fig. 1 and col. 3, lines 15-27, "A case-based reasoning system is shown in FIG. 1."

Simoudis teaches "communicating, by a troubleshooting wizard, a search request comprising a product problem description to a server computing device," see Fig. 1 and col. 3, lines 28-40, "When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14."

Simoudis teaches "responsive to receiving a response to the search request, systematically presenting to a user of the troubleshooting wizard historical product problem diagnosis data organized by the server computing device into a hierarchical tree from structured answer data objects in view of the product problem description," see Fig. 1 and col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem. When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14… Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "search request" is the referenced "new problem," the claimed "structured answer data objects" are the referenced "retrieve[d] cases" and the claimed "hierarchically tree" is the referenced "symptoms of the problem, the cause of a problem, and a solution to the problem" which is hierarchical because a symptom must have a cause which must have a solution.

Simoudis teaches "and responsive to receiving a response to the search request, presenting, by the troubleshooting wizard, information from the response to the user, the information comprising historic problem diagnosis data, the historic problem diagnosis data comprising information that is a result of an end-user and product support engineer product communication processes, which is not based on information solely generated by a professional writer or vendor tasked with documenting a product being associated with term(s) and/or phrase(s) related to the product problem description," see Fig. 1, col. 1, lines 23-35, "Case based reasoning is an artificial intelligence technique implemented with a computer that accepts the description of a problem and uses a database of past cases in order to find a solution to the problem at hand. The term 'case' refers to a problem-solving experience" and col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem. When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14… Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "communication process" is the referenced "problem-solving experience" and the claimed "historic problem diagnosis data" is the referenced "symptoms of the problem, the cause of a problem, and a solution to the problem" which is historic since it is a previously solved case.

40. Simoudis teaches "The computing device of claim 39, wherein the historic problem diagnosis data comprise any one or more of hierarchically structured product problem description, symptom, cause, and resolution information," see col. 3, lines 28-40, "a case is a

database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem."

41. Simoudis teaches "The computing device of claim 39, wherein the information comprises a link to a product support article," see col. 9, lines 61-67, "A causal explanation is an annotation, or summary, made by the technician or user who inserted a case in the case library 12."

42. Simoudis teaches "The computing device of claim 39, wherein the information comprises a set of structured answer objects," see col. 3, lines 28-40, "Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "structured answer objects" are the referenced "retrieve[d] cases."

45. Simoudis teaches "A computing device comprising: means for converting unstructured service requests comprising information that is a result of an end-user and product support engineer product communication processes, which is not based on information solely generated by a professional writer or vendor tasked with documenting a product, to one or more structured answer objects, each unstructured service request including information to narrow product problem symptom(s) to a root cause, each structured answer object comprising hierarchically structured historic problem diagnosis data," see Fig. 1, col. 1, lines 23-35, "Case based reasoning is an artificial intelligence technique implemented with a computer that accepts the description of a problem and uses a database of past cases in order to find a solution to the problem at hand. The term 'case' refers to a problem-solving experience" and col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem,

and a solution to the problem. When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14… Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "unstructured service request" is the referenced "new problem," the claimed "structured answer objects" are the referenced "retrieve[d] cases," the claimed "communication process" is the referenced "problem-solving experience," the claimed "information to narrow product problem symptom(s)" is the referenced "most important features" and the claimed "hierarchically structured historic problem diagnosis data" is the referenced "symptoms of the problem, the cause of a problem, and a solution to the problem" which is historic since it is a previously solved case and is hierarchical because a symptom must have a cause which must have a solution.

Simoudis teaches "and in view of a product problem description: means for identifying a set of the one or more structured answer data objects, each structured answer data object in the set comprising term(s) and/or phrase(s) related to the product problem description," see Fig. 1 and col. 3, lines 50-64, "Once the case retriever 14 has retrieved cases from the case library 12… the case retriever 14 then performs a justification for each of the cases which have been retrieved… The first action is the acceptance of a retrieved case because it is justifiably relevant to the problem being solved," where the claimed "set" is the referenced "case [that] is justifiably relevant."

Simoudis teaches "and means for providing historic and hierarchically structured problem diagnosis data from the set to an end-user for product problem diagnosis," see Fig. 1 and col. 7,

lines 9-23, "The retrieved cases whose causal explanation can be successfully used to solve a problem are returned to the user or the case reasoner."

Simoudis teaches "the problem diagnosis data comprising: a product problem description," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "description" is the referenced "symptoms of the problem."

Simoudis teaches "a product problem cause that caused the described product problem," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "cause" is the referenced "cause of the problem."

Simoudis teaches "and a product problem resolution that resolves the described product problem by fixing the corresponding product problem cause, wherein a product problem description data field is a parent node of a product problem cause data field, and the product problem cause data field is a parent node of the product problem resolution data field," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the claimed "resolution" is the referenced "solution to the problem," and where the results are hierarchical because a symptom must have a cause which must have a solution.

47. Simoudis teaches "The computing device of claim 45, and wherein the problem diagnosis data comprise a link to a product support article," see col. 9, lines 61-67, "A causal explanation is an annotation, or summary, made by the technician or user who inserted a case in the case library 12."

48. Simoudis teaches "The computing device of claim 45, and further comprising: means for receiving, from a client computing device, the product problem description," see Fig. 1 and col. 3, lines 28-40, "When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14."

Simoudis teaches "and wherein the means for providing the historic and hierarchically structured problem diagnosis data further comprises: means for searching an index for terms and/or phrases that match term(s) in the product problem description to identify the one or more structured answer objects in the set," see Fig. 1 and col. 3, lines 28-40, "When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14."

Simoudis teaches "and means for communicating the set to the client computing device for display by a troubleshooting wizard to the end-user," see Fig. 1 and col. 7, lines 9-23, "The retrieved cases whose causal explanation can be successfully used to solve a problem are returned to the user or the case reasoner."

49. Simoudis teaches "The computing device of claim 45, further comprising means for dynamically generating a knowledge base article from information provided by the set," see col. 4, lines 4-14, "A second type of learning occurs after the new problem has been solved (or not solved), with the information gained during the problem solving session being stored as a new case in the case library 12."

50. Simoudis teaches "A computing device comprising: means for processing; means for storing computer-program instructions executable by the processor," see Fig. 1 and col. 3, lines 15-27, "A case-based reasoning system is shown in FIG. 1."

Simoudis teaches "means for communicating a search request to a server computing device, the means enabling a user to communicate a product problem description," see Fig. 1 and col. 3, lines 28-40, "When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14."

Simoudis teaches "and responsive to receiving a response to the search request, means for presenting information from the response to the user, the information comprising hierarchically structured historic problem cause and resolution data, the historic problem cause and resolution data being associated with term(s) and/or phrase(s) related to the product problem description," see Fig. 1, col. 1, lines 23-35, "Case based reasoning is an artificial intelligence technique implemented with a computer that accepts the description of a problem and uses a database of past cases in order to find a solution to the problem at hand. The term 'case' refers to a problem-solving experience" and col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem. When a new problem is presented to the system 10, the information (or symptoms) relating to the new problem is input into a case retriever 14... Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "search request" is the referenced "new problem," the claimed "information" is the referenced "retrieve[d] cases" and the claimed "hierarchically structured historic problem cause and resolution data" is the referenced "symptoms of the problem, the cause of a problem, and a solution to the problem" which is historic since it is a previously solved case and is hierarchical because a symptom must have a cause which must have a solution.

Simoudis teaches "wherein the product problem description is the parent of the corresponding historic problem cause data, and the historic problem cause data are parents of the corresponding historic problem resolution data," see col. 3, lines 28-40, "a case is a database entry that includes the symptoms of the problem, the cause of a problem, and a solution to the problem," where the results are hierarchical because a symptom must have a cause which must have a solution.

52. Simoudis teaches "The computing device of claim 50, wherein the information comprises a link to a product support article," see col. 9, lines 61-67, "A causal explanation is an annotation, or summary, made by the technician or user who inserted a case in the case library 12."

53. Simoudis teaches "The computing device of claim 50, wherein the information comprises a set of structured answer objects," see col. 3, lines 28-40, "Using these most important features, the case retriever 14 queries the case library and retrieves cases that are initially deemed appropriate to the new problem," where the claimed "structured answer objects" are the referenced "retrieve[d] cases."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7-8, 13-14, 21-22, 27-28, 37-38, 43-44 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simoudis, U.S. 5,224,206 (Simoudis), in view of Vaithyanathan et al., U.S. 5,819,258 (Vaithyanathan).

7. Simoudis does not teach "The method of claim 6, wherein after converting the unstructured service requests and before identifying the set and providing the historic and hierarchically structured problem diagnosis data, the method further comprises: clustering respective ones of the structured answer objects based on the index to group related structured answer objects." Vaithyanathan does, however, see col. 10, lines 19-28, "Referring back to FIG. 3, after feature extraction is completed in step 306, clustering is performed in step 308. More particularly, after the subset of tokens has been reduced by feature extraction, the reduced dimension matrix 612 is clustered." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Vaithyanathan's teachings would have allowed Simoudis' method and system to gain greater speed for search and browse operations, see col. 2, lines 16-31.

Vaithyanathan teaches "and wherein providing the set, the set comprises a reinforced cluster of structured answer objects," see col. 7, lines 20-42, "Additionally, the weighting methods used in the vector-space model assign a relatively low weight to commonly occurring terms and relatively higher weights to rarer terms."

8. Simoudis does not teach "The method of claim 7, wherein clustering comprises reinforced and unified clustering operations." Vaithyanathan does, however, see col. 10, lines 19-28, "Referring back to FIG. 3, after feature extraction is completed in step 306, clustering is performed in step 308. More particularly, after the subset of tokens has been reduced by feature

extraction, the reduced dimension matrix 612 is clustered." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Vaithyanathan's teachings would have allowed Simoudis' method and system to gain greater speed for search and browse operations, see col. 2, lines 16-31.

13. Simoudis does not teach "The method of claim 12, wherein respective ones of the structured answer objects are clustered by the server computing device as corresponding to one another, the clustering being based on reinforced clustering operations." Vaithyanathan does, however, see col. 10, lines 19-28, "Referring back to FIG. 3, after feature extraction is completed in step 306, clustering is performed in step 308. More particularly, after the subset of tokens has been reduced by feature extraction, the reduced dimension matrix 612 is clustered." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Vaithyanathan's teachings would have allowed Simoudis' method and system to gain greater speed for search and browse operations, see col. 2, lines 16-31.

14. Simoudis does not teach "The method of claim 13, wherein the clustering is further based on unified clustering operations." Vaithyanathan does, however, see col. 10, lines 19-28, "Referring back to FIG. 3, after feature extraction is completed in step 306, clustering is performed in step 308. More particularly, after the subset of tokens has been reduced by feature extraction, the reduced dimension matrix 612 is clustered." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Vaithyanathan's teachings would have allowed Simoudis' method and system to gain greater speed for search and browse operations, see col. 2, lines 16-31.

21. Simoudis does not teach "The computer-readable medium of claim 20, wherein after converting the unstructured service requests and before identifying the set and providing the historic and hierarchically structured problem diagnosis data, the computer- executable instruction further comprise instructions for: clustering respective ones of the structured answer objects based on the index to group related structured answer objects." Vaithyanathan does, however, see col. 10, lines 19-28, "Referring back to FIG. 3, after feature extraction is completed in step 306, clustering is performed in step 308. More particularly, after the subset of tokens has been reduced by feature extraction, the reduced dimension matrix 612 is clustered." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Vaithyanathan's teachings would have allowed Simoudis' method and system to gain greater speed for search and browse operations, see col. 2, lines 16-31.

Vaithyanathan teaches "and wherein providing the set, the set comprises a reinforced cluster of structured answer objects," see col. 7, lines 20-42, "Additionally, the weighting methods used in the vector-space model assign a relatively low weight to commonly occurring terms and relatively higher weights to rarer terms."

22. Simoudis does not teach "The computer-readable medium of claim 21, wherein clustering comprises reinforced and unified clustering operations." Vaithyanathan does, however, see col. 10, lines 19-28, "Referring back to FIG. 3, after feature extraction is completed in step 306, clustering is performed in step 308. More particularly, after the subset of tokens has been reduced by feature extraction, the reduced dimension matrix 612 is clustered." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention

to combine the teachings of the cited references because Vaithyanathan's teachings would have allowed Simoudis' method and system to gain greater speed for search and browse operations, see col. 2, lines 16-31.

27. Simoudis does not teach "The computer-readable storage medium of claim 26, wherein respective ones of the structured answer objects were clustered by the server computing device as corresponding to one-another, the clustering being based on reinforced clustering operations." Vaithyanathan does, however, see col. 10, lines 19-28, "Referring back to FIG. 3, after feature extraction is completed in step 306, clustering is performed in step 308. More particularly, after the subset of tokens has been reduced by feature extraction, the reduced dimension matrix 612 is clustered." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Vaithyanathan's teachings would have allowed Simoudis' method and system to gain greater speed for search and browse operations, see col. 2, lines 16-31.

28. Simoudis does not teach "The computer-readable storage medium of claim 27, wherein the clustering is further based on unified clustering operations." Vaithyanathan does, however, see col. 10, lines 19-28, "Referring back to FIG. 3, after feature extraction is completed in step 306, clustering is performed in step 308. More particularly, after the subset of tokens has been reduced by feature extraction, the reduced dimension matrix 612 is clustered." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Vaithyanathan's teachings would have allowed Simoudis' method and system to gain greater speed for search and browse operations, see col. 2, lines 16-31.

37. Simoudis does not teach "The computing device of claim 36, wherein after converting the unstructured service requests and before identifying the set and providing the historic and hierarchically structured problem diagnosis data, the computer- executable instruction further comprise instructions for: clustering respective ones of the structured answer objects based on the index to group related structured answer objects." Vaithyanathan does, however, see col. 10, lines 19-28, "Referring back to FIG. 3, after feature extraction is completed in step 306, clustering is performed in step 308. More particularly, after the subset of tokens has been reduced by feature extraction, the reduced dimension matrix 612 is clustered." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Vaithyanathan's teachings would have allowed Simoudis' method and system to gain greater speed for search and browse operations, see col. 2, lines 16-31.

Vaithyanathan teaches "and wherein providing the set, the set comprises a reinforced cluster of structured answer objects," see col. 7, lines 20-42, "Additionally, the weighting methods used in the vector-space model assign a relatively low weight to commonly occurring terms and relatively higher weights to rarer terms."

38. Simoudis does not teach "The computing device of claim 37, wherein clustering comprises reinforced and unified clustering operations." Vaithyanathan does, however, see col. 10, lines 19-28, "Referring back to FIG. 3, after feature extraction is completed in step 306, clustering is performed in step 308. More particularly, after the subset of tokens has been reduced by feature extraction, the reduced dimension matrix 612 is clustered." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to

combine the teachings of the cited references because Vaithyanathan's teachings would have allowed Simoudis' method and system to gain greater speed for search and browse operations, see col. 2, lines 16-31.

43. Simoudis does not teach "The computing device of claim 42, wherein respective ones of the structured answer objects were clustered by the server computing device as corresponding to one-another, the clustering being based on reinforced clustering operations." Vaithyanathan does, however, see col. 10, lines 19-28, "Referring back to FIG. 3, after feature extraction is completed in step 306, clustering is performed in step 308. More particularly, after the subset of tokens has been reduced by feature extraction, the reduced dimension matrix 612 is clustered." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Vaithyanathan's teachings would have allowed Simoudis' method and system to gain greater speed for search and browse operations, see col. 2, lines 16-31.

44. Simoudis does not teach "The computing device of claim 43, wherein the clustering is further based on unified clustering operations." Vaithyanathan does, however, see col. 10, lines 19-28, "Referring back to FIG. 3, after feature extraction is completed in step 306, clustering is performed in step 308. More particularly, after the subset of tokens has been reduced by feature extraction, the reduced dimension matrix 612 is clustered." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Vaithyanathan's teachings would have allowed Simoudis' method and system to gain greater speed for search and browse operations, see col. 2, lines 16-31.

54. Simoudis does not teach "The computing device of claim 53, wherein respective ones of the structured answer objects were clustered by the server computing device as corresponding to one another." Vaithyanathan does, however, see col. 10, lines 19-28, "Referring back to FIG. 3, after feature extraction is completed in step 306, clustering is performed in step 308. More particularly, after the subset of tokens has been reduced by feature extraction, the reduced dimension matrix 612 is clustered." Thus, it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine the teachings of the cited references because Vaithyanathan's teachings would have allowed Simoudis' method and system to gain greater speed for search and browse operations, see col. 2, lines 16-31.

Response to Arguments

Applicant's arguments with respect to the 35 U.S.C. 102 and 103 rejections of the independent claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure: U.S. 5,794,237 and U.S. 2004/0193560.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Sanders whose telephone number is 571-270-1016. The examiner can normally be reached on M-F 9:00a-4:00p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on 571-272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Tim T. Vo/
Supervisory Patent Examiner, Art Unit 2168

/Aaron Sanders/
Examiner, Art Unit 2168
4 June 2008

/S. P./
Primary Examiner, Art Unit 2164